M092-EDR380-001

HIGH RESOLUTION WDR COLOR MODULE CAMERA

OPERATION MANUAL

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Before attempting to connect or operate, please read and follow these instructions.

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4. Never face the camera towards the sun or any bright or reflective light, which may cause smear on the picture and possible damage to the CCD.
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CAUTIONS

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CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

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FEATURES

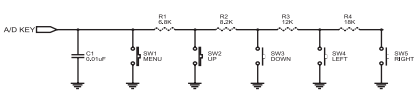
- 1/3˝960H SONY Double Scan Super HAD CCD II
- High Resolution of 700TV Lines
- WDR (Wide Dynamic Range)
- OSD Function
- Multi Language (English / Chinese / Russian / Spanish / German)
- Digital slow shutter
- 3DNR
- Privacy Zone 15Zone
- 3x Digital Zoom
- Motion Detect, Face Detection
- Only DC12V
- RS-232C TTL Level Interface(RS-485 Option)
- A/D Remote Controller > Option

How WDR makes better image?

WDR allows every detail to be captured accurately even if one portion is bright while other portions are dark.

Option(Lens.A/D Remocom)

Lens Type	Pin Hole
	Board
	Varlfocal
	C/CS Mount



Function

SW1 : MENU	OSD Menu on/off
SW2 : UP	OSD Menu up
SW3 : DOWN	OSD Menu down
SW4 : LEFT	OSD Menu left
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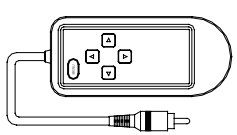
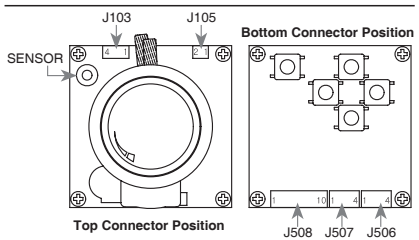
Option



CONNECTION



1) J103(DC IRIS)

PIN NO.	NAME	I/O
1	DAMP +	O
2	DAMP -	O
3	DRV +	O
4	GND	-

2) J105(IR CUT)

PIN NO.	NAME	I/O
1	IR CUT OUT +	O
2	IR CUT OUT -	O

3) J506(DC IRIS)

PIN NO.	NAME	I/O
1	DAMP +	O
2	DAMP -	O
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CONNECTION

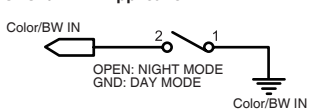
4) J507(DN_I/O)

PIN NO.	NAME	I/O
1	+12V	O
2	GND	-
3	COLOR/BW IN	I
4	COLOR/BW OUT	O

5) J508(DN_I/O)

PIN NO.	NAME	I/O
1	GND	-
2	VIDEO	O
3	GND	-
4	+12V	I
5	RXD(TRX-)	I/O
6	TXD(TRX+)	I/O
7	A/D KEY1	I
8	MOTION	O
9	COLOR/BW IN	I
10	GND	-

COLOR/BW IN Application

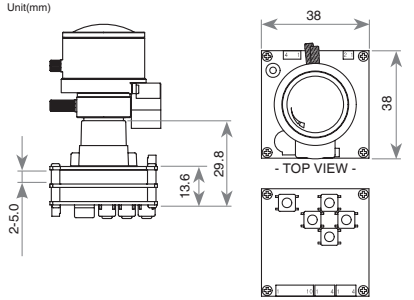


RS232C TTL LEVEL

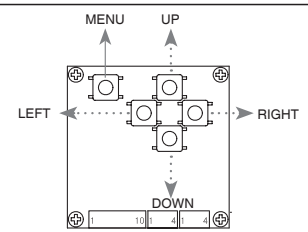
HIGH : +3.3V
LOW : GND

DIMENSIONS

Unit(mm)



Control Function



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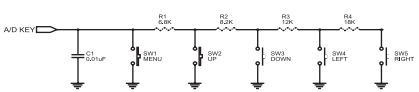

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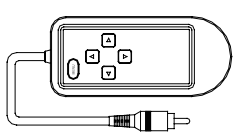
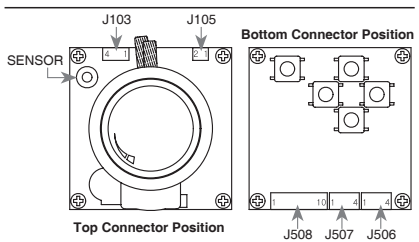


CONNECTION



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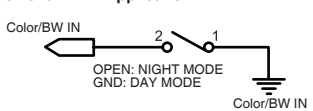

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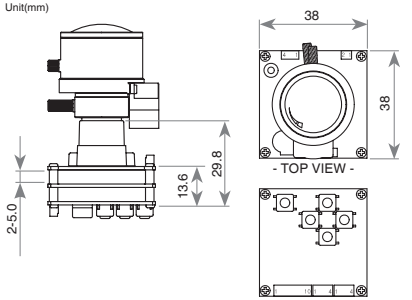

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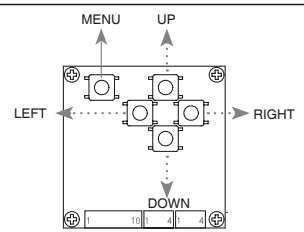

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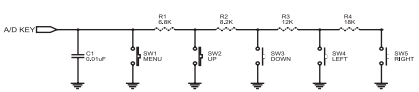

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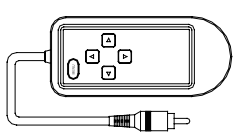
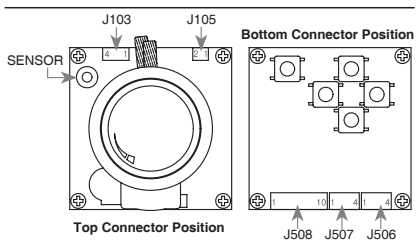
Option



CONNECTION



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PIN NO.	NAME	I/O
1	DAMP +	O
2	DAMP -	O
3	DRV +	O
4	GND	-

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PIN NO.	NAME	I/O
1	IR CUT OUT +	O
2	IR CUT OUT -	O

3) J506(DC IRIS)

PIN NO.	NAME	I/O
1	DAMP +	O
2	DAMP -	O
3	DRV +	O
4	GND	-

CONNECTION

4) J507(DN_I/O)

PIN NO.	NAME	I/O
1	+12V	O
2	GND	-
3	COLOR/BW IN	I
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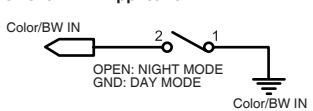
PIN NO.	NAME	I/O
1	GND	-
2	VIDEO	O
3	GND	-
4	+12V	I
5	RXD(TRX-)	I/O
6	TXD(TRX+)	I/O
7	A/D KEY1	I
8	MOTION	O
9	COLOR/BW IN	I
10	GND	-

COLOR/BW IN Application

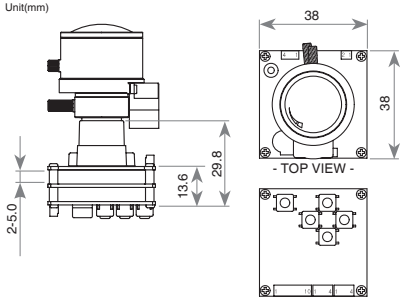


RS232C TTL LEVEL

HIGH : +3.3V
LOW : GND

DIMENSIONS

Unit(mm)



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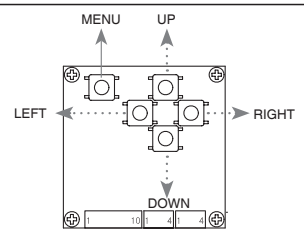


SPECIFICATION

Signal Format	NTSC	PAL
Image Device	1/3" 960H SONY Double Scan Super HAD CCD II	
Scanning System	2:1 Interlace	
H.Resolution	750TV Lines	
Scanning Frequency	H:15.734KHz, V:59.94Hz	H:15.625KHz, V:50Hz
Total Pixels	1028(H) X 508(V)	1028(H) X 596(V)
Effective Pixels	976(H) X 494(V)	976(H) X 582(V)
Electronic Shutter	1/60 ~1/100,000sec	1/50 ~1/100,000sec
Digital Zoom Ratio	3x	
Digital Slow Shutter	OFF, 2 ~ 128 Field	
Flickerless	ON / OFF	
WDR	ON / OFF (Level adjustable)	
BLC	ON / OFF (Level adjustment, Area selection)	
3DNR	ON / OFF (Level adjustable)	
Image Function	Image reverse(NORMAL/H / V / HV), Freeze	
Sharpness	Level adjustable	
AGC	LOW / MID / HIGH	
Day & Night	COLOR / BW / AUTO / EXT	
Motion Detection	ON / OFF (Level adjustable, Area adjustment)	
Face Detection	ON / OFF (Level adjustable, Area adjustment)	
Privacy Masking	15 Zones (Area adjustment)	
White Balance	ATW / PUSH / PUSH LOCK / MANUAL(R Gain, B Gain)	
OSD	Built in	
Language	English / Chinese / Russian / Spanish / German	
Protocol	Pelco*D"	
Baud Rate	2400 / 4800 / 9600 / 19200	
S/N Ratio	More than 50dB(AGC OFF, 3DNR ON)	
Gamma	r=0.45	
Min. Illumination	0.08Lux(Color) / 0.04Lux(BW) (30IRE@F1.2, AGC:HIGH)	
Sync System	Internal	

SPECIFICATION

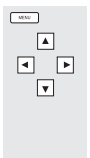
Video Output	1.0 Vp-p Composite 75(Ω) unbalanced
Lens	PIN HOLE, Board Lens, DC IRIS(IR Remove) Vari focal lens, C/CS(DC\VIDEO)
Power Consumption	DC 12V ±10%, Max 170mA
OperatingTemperature	14°F~122°F(-10°C~+50°C)
Storage Temperature	-4°F~140°F(-20°C~+60°C)
Humidity	Less than 80%
External Control	A/D KEY, RS232C TTL(RS485 option)
Weight	Approx. 35g
Dimensions(mm)	38mm x 38mm x 3 Board

OSD MANUAL

MENU DESCRIPTION

- The best clear image can be obtained color camera with WDR(Wide Dynamic Range).
- The camera switches lenses automatically depending on the illumination, which promotes the best possible color images during the day and black / white image at night.
- The camera function can be controlled by OSD menu.

OSD STRUCTURE



- ▲,▼ : Menu up / down
- ◀,▶ : Menu left / right
- ■ : MENU

OSD MANUAL

OSD FUNCTION DESCRIPTION

1.LENS

: Enable user to select the lens type according to equipped with camera. Set up using LEFT, RIGHT KEY at each menu.

- LENS TYPE
  ①ELC : Enable user to set up for BOARD lens.
  ②DC : Enable user to set up for DC Iris lens.
  ③VIDEO : Enable user to set up for VIDEO Iris lens.
- LEVEL
  : Enable user to select the level for Brightness of image(0~15).
- INITIAL
  : Enable user to initialize the LENS menu set up.

LENS

>LENS TYPE ··· DC
LEVEL ··· 08
INITIAL
RETURN

2. EXPOSURE

: Enable user to set up the function of SHUTTER, FLICKERLESS, AGC, DSS. Set up using LEFT, RIGHT KEY at each menu.

- SHUTTER
  : Enable user to set up the Shutter Speed
  -> 1/60(50), 1/100(120), 1/250, 1/500, 1/1K, 1/2K, 1/4K, 1/10K, 1/100K
  *() is for PAL TYPE
- FLICKERLESS
  : Enable user to set up the FLICKERLESS ON/OFF.
- AGC
  : Enable user to make image bright to amplify the Gain.
  -> LOW, MID, HIGH
- DSS(Digital Slow Shutter)
  : Enable user to enhance video quality in extreme low-light condition to slow down the shutter speed and collect over multiple fields based on the shutter limit setting.
  -> OFF, 2X, 4X, 8X, 16X, 32X, 64X, 128X
- INITIAL
  : Enable user to initialize the Exposure menu set up.

EXPOSURE

>SHUTTER ··· 1/60
FLICKERLESS ··· OFF
AGC ··· MID
DSS ··· 10x
INITIAL
RETURN

OSD MANUAL

3. WHITE BALANCE

: Enable user to represent the accurate white color by controlling the R,G,B level. Setting up LEFT, RIGHT KEY on each menu.

- WB MODE
  ① ATW : Enable user to trace the White Balance automatically in the range of 2,300K~10,000K.
  ② PUSH : Enable user to search for White Balance automatically. In this mode, color temperature range is broader than ATW.
  ③ PUSH LOCK : Enable user to fix the White Balance according to the color temperature in the certain environment.
  ④ MANUAL : Enable user to sets the White Balance according to the circumstance.
- RED CONT: In the USER setting of WB MODE, enable user to set the RED GAIN.
- BLUE CONT:In the USER setting of WB MODE, enable user to set the BLUE GAIN.
- PUSH AUTO : In the PUSH LOCK setting of WB MODE, enable user to fix the White Balance in camera setting.
- INITIAL : Enable user to reset the WHITE BALANCE menu setting.

WHITE BALANCE

>WB MODE ··· ATW
RED CONT ··· ----
BLUE CONT ··· ----
PUSH CONT ··· ----
INITIAL
RETURN

4. WDR/BLC

: Use the condition which Image doesn't figure out with BLC such as place surrounded windows and lobby. Set the WDR using the LEFT, RIGHT KEY on the each menu.

- WDR MODE
  ① OFF : None WDR
  ② ON : WDR Fixed
- WDR LEVEL
  : Enable user to set WDR Level(0~15 level).
- BLC(Back Light Compensation)
  : Back Light Compensation
- BLC ZONE : Enable user to set the BLC area. TOP, BOTTOM, CENTER, LEFT, RIGHT
- BLC LEVEL : Enable user to set BLC in selected area(0~15 level).
- INITIAL : Enable user to initialize the WDR setting.

WDR/BLC

>WDR MODE ··· OFF
WDR LEVEL ··· 08
BLC ··· OFF
BLC ZONE ··· CENTER
BLC LEVEL ··· 04
INITIAL
RETURN

TOP		
LEFT	CENTER	RIGHT
BOTTOM		

OSD MANUAL

5. DAY&NIGHT

: Conversion of output image COLOR / BW depending on exterior environment
Enable user to set the LEFT, RIGHT KEY in menu.

- D&N MODE
  ①COLOR : Enable user to fix the output image in color.
  ②B/W : Enable user to fix the output image in B/W.
  ③AUTO : Enable user to convert to COLOR/BW automatically
  ④EXT : Enable user to convert to COLOR/BW by signal of the exterior input.
  -> Low input signal : COLOR
  -> High input signal : BW
- DETECT MODE
  ①AUTO : SENSOR + VIDEO Detection Mode
  Enable user to convert to COLOR/BW by exterior sensor with illumination
  ②SENSOR : SENSOR Only Detection Mode
  Enable user to convert to COLOR/BW automatically by exterior sensor
  ②VIDEO : VIDEO Only Detection Mode Enable user to convert to COLOR/BW automatically by luminace element on Screen
- DWELL TIME : In D&N MODE AUTO, enable user to set to delay time for changing COLOR/BW (0~10sec).
- D->N LEVEL : Day(Color) to Night(BW), level(0~19).
- N->D LEVEL : Night(BW) to Day, level(1~20).
- INITIAL : Enable user to initialize the setting in DAY&NIGHT menu.

DAY & NIGHT

>D&N MODE ··· COLOR
DETECT MODE ··· ----
DWELL TIME ··· ----
D -> N LEVEL ··· ----
N -> D LEVE ··· ----
INITIAL
RETURN

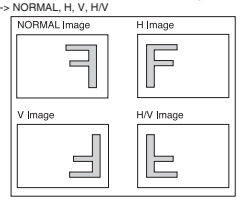
SENSOR D->N / N-> D LEVEL			
LEVEL	LUX	LEVEL	LUX
0	1 Lux	11	12 Lux
1	2 Lux	12	13 Lux
2	3 Lux	13	14 Lux
3	4 Lux	14	15 Lux
4	5 Lux	15	16 Lux
5	6 Lux	16	17 Lux
6	7 Lux	17	18 Lux
7	8 Lux	18	19 Lux
8	9 Lux	19	20 Lux
9	10 Lux	20	21 Lux
10	11 Lux		

OSD MANUAL

6. IMAGE

: REVERSE, DNR, SHARPNESS, FREEZE, D-ZOOM functions set up by pressing LEFT, RIGHT KEY.

- REVERSE: Enable user to reverse the image.
  -> NORMAL, H, V, H/V



- DNR : Reduces noise by using time-based filtering.
- DNR LEVEL : Enable user to set level(0~15 steps).
- SHARPNESS : Enable user to control the image sharpness (0~15steps).
- FREEZE : Enable user to freeze the image.
- D-ZOOM(Digital Zoom)
  -> Max. 3x Digital Zoom.
- INITIAL : Enable user to initialize the setting on IMAGE menu.

IMAGE

>REVERSE ··· NORMAL
DNR ··· OFF
DNR LEVEL ··· 4
SHARPNESS ··· 10
FREEZE ··· OFF
D-ZOOM ··· 1,0x
INITIAL
RETURN

OSD MANUAL

7. SPECIAL

: Setting up the CAM TITLE, LANGUAGE, COMM ADJ, PRIVACY, MOTION DET, DISPLAY Set up using LEFT and RIGHT key in each manual.

- CAM TITLE :
  Enable user to choose any word in screen. (Maximum 10 letter is available)
  ① A letter Choice from the screen using Menu key.
  ② Enable user to move to next menu using LEFT, RIGHT KEY in LOCATION.
  ③ By using UP, DOWN, LEFT, RIGHT KEY, enable user to choose any letters in LOCATION and then get back to previous step.
  ④ Enable user to finish words choice and position by using LEFT, RIGHT KEY in RETURN.
- LANGUAGE :
  Enable user to set up an OSD language.
  -> ENGLISH, CHINESE, RUSSIAN, SPANISH, GERMAN
- COMM ADJ : Enable user to set up CAMERA ID, BAUDRATE.
  ① CAM ID: Enable user to set up Camera ID(0~255).
  ② BAUDRATE: A communication speed to Communicate with external device.
  (2400, 4800, 9600, 19200).
- PRIVACY: Privacy is the function that covers some part on screen to prevent private life (Maximum 15 point covered).
  ① ZONE: Enable user to set up positions from 0to14.
  ② MASK: Enable user to set up screen output of chosen position.
  ③ V START: Mask Vertical start position.
  ④ V END: Mask Vertical end position.
  ⑤ H START: Mask Horizontal start position.
  ⑥ H END: Mask Horizontal end position.
  ⑦ TOP ANGLE: Top angle position.
  ⑧ BOTTOM ANGLE: Bottom angle position.
  ⑨ INITIAL: Enable user to initialize setting of PRIVACY MENU.

SPECIAL

>CAM TITLE ··· [–]
LANGUAGE ··· ENGLISH
COMM ADJ ··· [–]
PRIVACY ··· [–]
MOTION DETECT ··· [–]
DISPLAY ··· [–]
INITIAL
RETURN

CAM TITLE

0123456789ABCDEFGHIJKLMN
OPQRSTUVWXYZ!?+#$%{}<>{.}

SPACE>> <<BACK

LOCATION ··· [–]
RETURN

[TITLE LOCATION]

TITLE

[U] ↑ [D] ↓ [L]← [R]→ [M] +

CAMM ADJ

>CAM ID ··· 000
BAUDRATE ··· 9600
RETURN

PRIVACY

>ZONE NO ··· 0
MASK ··· OFF
V START ··· 07
V END ··· 12
H START ··· 10
H END ··· 19
TOP ANGLE ··· 00
BOTTOM ANGLE ··· 00
INITIAL
RETURN

OSD MANUAL

- MOTION DET : Motion detection and Face detection function.
  ① MOTION MODE : Enable user to set up ON/OFF.
  ② LEVEL : Enable user to setup a motion detect sensitivity (0~15).
  ③ FACE MODE : Enable user to set up ON/OFF.
  ④ LEVEL : Enable user to set up a face detect sensitivity (0~15).
  ⑤ V START : Mask Vertical start position.
  ⑥ V END : Mask Vertical end position.
  ⑦ H START : Mask Horizontal start position.
  ⑧ H END : Mask Horizontal end position.
  ⑨ INITIAL : Enable user to initialize setting of MOTION DETECT.

MOTION DET

>MOTION MODE ··· ON
LEVEL ··· 08
FACE MODE ··· ON
LEVEL ··· 07
V START ··· 01
V END ··· 06
H START ··· 01
H END ··· 10
INITIAL
RETURN

- DISPLAY : Enable user to set up a screen marking of CAM ID, CAM TITLE, MOTION,FACE
  ① CAM ID : Enable user to set up output on Camera ID screen.
  ② CAM TITLE : Enable user to set up output in fixed CAM TITLE.
  ③ MOTION DETECT : Enable user to set up out put of MOTION on the screen as MOTION DET ON setting.
  ⑤ FACE DETECT : Enable user to set up out put of FACE on the screen as FACE DETECT ON setting.
  ④ INITIAL : Enable user to initialize of DISPLAY menu.

DISPLAY

>CAM ID ··· OFF
CAM TITLE ··· OFF
MOTION DETECT ··· OFF
FACE DETECT ··· OFF
INITIAL
RETURN

8. FACTORY DEFAULT

: Enable user to reset all of the status as the factory default
Setting up using LEFT, RIGHT KEY.

9. EXIT

: Enable user to EXIT the OSD menu Setting up using LEFT, RIGHT KEY.

SPECIFICATION

Signal Format	NTSC	PAL
Image Device	1/3" 960H SONY Double Scan Super HAD CCD II	
Scanning System	2:1 Interlace	
H.Resolution	750TV Lines	
Scanning Frequency	H:15.734KHz, V:59.94Hz	H:15.625KHz, V:50Hz
Total Pixels	1028(H) X 508(V)	1028(H) X 596(V)
Effective Pixels	976(H) X 494(V)	976(H) X 582(V)
Electronic Shutter	1/60 ~1/100,000sec	1/50 ~1/100,000sec
Digital Zoom Ratio	3x	
Digital Slow Shutter	OFF, 2 ~ 128 Field	
Flickerless	ON / OFF	
WDR	ON / OFF (Level adjustable)	
BLC	ON / OFF (Level adjustment, Area selection)	
3DNR	ON / OFF (Level adjustable)	
Image Function	Image reverse(NORMAL/H / V / HV), Freeze	
Sharpness	Level adjustable	
AGC	LOW / MID / HIGH	
Day & Night	COLOR / BW / AUTO / EXT	
Motion Detection	ON / OFF (Level adjustable, Area adjustment)	
Face Detection	ON / OFF (Level adjustable, Area adjustment)	
Privacy Masking	15 Zones (Area adjustment)	
White Balance	ATW / PUSH / PUSH LOCK / MANUAL(R Gain, B Gain)	
OSD	Built in	
Language	English / Chinese / Russian / Spanish / German	
Protocol	Pelco*D"	
Baud Rate	2400 / 4800 / 9600 / 19200	
S/N Ratio	More than 50dB(AGC OFF, 3DNR ON)	
Gamma	r=0.45	
Min. Illumination	0.08Lux(Color) / 0.04Lux(BW) (30IRE@F1.2, AGC:HIGH)	
Sync System	Internal	

SPECIFICATION

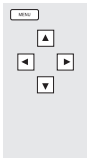
Video Output	1.0 Vp-p Composite 75(Ω) unbalanced
Lens	PIN HOLE, Board Lens, DC IRIS(IR Remove) Vari focal lens, C/CS(DC\VIDEO)
Power Consumption	DC 12V ±10%, Max 170mA
OperatingTemperature	14°F~122°F(-10°C~+50°C)
Storage Temperature	-4°F~140°F(-20°C~+60°C)
Humidity	Less than 80%
External Control	A/D KEY, RS232C TTL(RS485 option)
Weight	Approx. 35g
Dimensions(mm)	38mm x 38mm x 3 Board

OSD MANUAL

MENU DESCRIPTION

- The best clear image can be obtained color camera with WDR(Wide Dynamic Range).
- The camera switches lenses automatically depending on the illumination, which promotes the best possible color images during the day and black / white image at night.
- The camera function can be controlled by OSD menu.

OSD STRUCTURE



- ▲,▼ : Menu up / down
- ◀,▶ : Menu left / right
- ■ : MENU

OSD MANUAL

OSD FUNCTION DESCRIPTION

1.LENS
: Enable user to select the lens type according to equipped with camera. Set up using LEFT, RIGHT KEY at each menu.

- LENS TYPE
  ①ELC : Enable user to set up for BOARD lens.
  ②DC : Enable user to set up for DC Iris lens.
  ③VIDEO : Enable user to set up for VIDEO Iris lens.
- LEVEL
  : Enable user to select the level for Brightness of image(0~15).
- INITIAL
  : Enable user to initialize the LENS menu set up.

LENS
>LENS TYPE ··· DC
LEVEL ··· 08
INITIAL
RETURN

2. EXPOSURE
: Enable user to set up the function of SHUTTER, FLICKERLESS, AGC, DSS. Set up using LEFT, RIGHT KEY at each menu.

- SHUTTER
  : Enable user to set up the Shutter Speed
  -> 1/60(50), 1/100(120), 1/250, 1/500, 1/1K, 1/2K, 1/4K, 1/10K, 1/100K
  *() is for PAL TYPE
- FLICKERLESS
  : Enable user to set up the FLICKERLESS ON/OFF.
- AGC
  : Enable user to make image bright to amplify the Gain.
  -> LOW, MID, HIGH
- DSS(Digital Slow Shutter)
  : Enable user to enhance video quality in extreme low-light condition to slow down the shutter speed and collect over multiple fields based on the shutter limit setting.
  -> OFF, 2X, 4X, 8X, 16X, 32X, 64X, 128X
- INITIAL
  : Enable user to initialize the Exposure menu set up.

EXPOSURE
>SHUTTER ··· 1/60
FLICKERLESS ··· OFF
AGC ··· MID
DSS ··· 10x
INITIAL
RETURN

OSD MANUAL

3. WHITE BALANCE
: Enable user to represent the accurate white color by controlling the R,G,B level. Setting up LEFT, RIGHT KEY on each menu.

- WB MODE
  ① ATW : Enable user to trace the White Balance automatically in the range of 2,300K~10,000K.
  ② PUSH : Enable user to search for White Balance automatically. In this mode, color temperature range is broader than ATW.
  ③ PUSH LOCK : Enable user to fix the White Balance according to the color temperature in the certain environment.
  ④ MANUAL : Enable user to sets the White Balance according to the circumstance.
- RED CONT: In the USER setting of WB MODE, enable user to set the RED GAIN.
- BLUE CONT:In the USER setting of WB MODE, enable user to set the BLUE GAIN.
- PUSH AUTO : In the PUSH LOCK setting of WB MODE, enable user to fix the White Balance in camera setting.
- INITIAL : Enable user to reset the WHITE BALANCE menu setting.

WHITE BALANCE
>WB MODE ··· ATW
RED CONT ··· ----
BLUE CONT ··· ----
PUSH CONT ··· ----
INITIAL
RETURN

4. WDR/BLC
: Use the condition which Image doesn't figure out with BLC such as place surrounded windows and lobby. Set the WDR using the LEFT, RIGHT KEY on the each menu.

- WDR MODE
  ① OFF : None WDR
  ② ON : WDR Fixed
- WDR LEVEL
  : Enable user to set WDR Level(0~15 level).
- BLC(Back Light Compensation)
  : Back Light Compensation
- BLC ZONE : Enable user to set the BLC area. TOP, BOTTOM, CENTER, LEFT, RIGHT
- BLC LEVEL : Enable user to set BLC in selected area(0~15 level).
- INITIAL : Enable user to initialize the WDR setting.

WDR/BLC
>WDR MODE ··· OFF
WDR LEVEL ··· 08
BLC ··· OFF
BLC ZONE ··· CENTER
BLC LEVEL ··· 04
INITIAL
RETURN

TOP		
LEFT	CENTER	RIGHT
BOTTOM		

OSD MANUAL

5. DAY&NIGHT
: Conversion of output image COLOR / BW depending on exterior environment Enable user to set the LEFT, RIGHT KEY in menu.

- D&N MODE
  ①COLOR : Enable user to fix the output image in color.
  ②B/W : Enable user to fix the output image in B/W.
  ③AUTO : Enable user to convert to COLOR/BW automatically
  ④EXT : Enable user to convert to COLOR/BW by signal of the exterior input.
  -> Low input signal : COLOR
  -> High input signal : BW
- DETECT MODE
  ①AUTO : SENSOR + VIDEO Detection Mode
  Enable user to convert to COLOR/BW by exterior sensor with illumination
  ②SENSOR : SENSOR Only Detection Mode
  Enable user to convert to COLOR/BW automatically by exterior sensor
  ②VIDEO : VIDEO Only Detection Mode Enable user to convert to COLOR/BW automatically by luminace element on Screen
- DWELL TIME : In D&N MODE AUTO, enable user to set to delay time for changing COLOR/BW (0~10sec).
- D->N LEVEL : Day(Color) to Night(BW), level(0~19).
- N->D LEVEL : Night(BW) to Day, level(1~20).
- INITIAL : Enable user to initialize the setting in DAY&NIGHT menu.

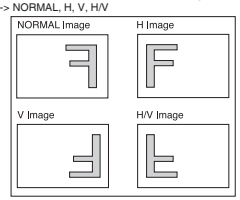
DAY & NIGHT
>D&N MODE ··· COLOR
DETECT MODE ··· ----
DWELL TIME ··· ----
D -> N LEVEL ··· ----
N -> D LEVEL ··· ----
INITIAL
RETURN

SENSOR D->N / N-> D LEVEL			
LEVEL	LUX	LEVEL	LUX
0	1 Lux	11	12 Lux
1	2 Lux	12	13 Lux
2	3 Lux	13	14 Lux
3	4 Lux	14	15 Lux
4	5 Lux	15	16 Lux
5	6 Lux	16	17 Lux
6	7 Lux	17	18 Lux
7	8 Lux	18	19 Lux
8	9 Lux	19	20 Lux
9	10 Lux	20	21 Lux
10	11 Lux		

OSD MANUAL

6. IMAGE
: REVERSE, DNR, SHARPNESS, FREEZE, D-ZOOM functions set up by pressing LEFT, RIGHT KEY.

- REVERSE: Enable user to reverse the image.
  -> NORMAL, H, V, H/V



- DNR : Reduces noise by using time-based filtering.
- DNR LEVEL : Enable user to set level(0~15 steps).
- SHARPNESS : Enable user to control the image sharpness (0~15steps).
- FREEZE : Enable user to freeze the image.
- D-ZOOM(Digital Zoom)
  -> Max. 3x Digital Zoom.
- INITIAL : Enable user to initialize the setting on IMAGE menu.

IMAGE
>REVERSE ··· NORMAL
DNR ··· OFF
DNR LEVEL ··· 4
SHARPNESS ··· 10
FREEZE ··· OFF
D-ZOOM ··· 1,0x
INITIAL
RETURN

OSD MANUAL

7. SPECIAL
: Setting up the CAM TITLE, LANGUAGE, COMM ADJ, PRIVACY, MOTION DET, DISPLAY Set up using LEFT and RIGHT key in each manual.

- CAM TITLE :
  Enable user to choose any word in screen. (Maximum 10 letter is available)
  ① A letter Choice from the screen using Menu key.
  ② Enable user to move to next menu using LEFT, RIGHT KEY in LOCATION.
  ③ By using UP, DOWN, LEFT, RIGHT KEY, enable user to choose any letters in LOCATION and then get back to previous step.
  ④ Enable user to finish words choice and position by using LEFT, RIGHT KEY in RETURN.
- LANGUAGE :
  Enable user to set up an OSD language.
  -> ENGLISH, CHINESE, RUSSIAN, SPANISH, GERMAN
- COMM ADJ : Enable user to set up CAMERA ID, BAUDRATE.
  ① CAM ID: Enable user to set up Camera ID(0~255).
  ② BAUDRATE: A communication speed to Communicate with external device.
  (2400, 4800, 9600, 19200).
- PRIVACY: Privacy is the function that covers some part on screen to prevent private life (Maximum 15 point covered).
  ① ZONE: Enable user to set up positions from 0to14.
  ② MASK: Enable user to set up screen output of chosen position.
  ③ V START: Mask Vertical start position.
  ④ V END: Mask Vertical end position.
  ⑤ H START: Mask Horizontal start position.
  ⑥ H END: Mask Horizontal end position.
  ⑦ TOP ANGLE: Top angle position.
  ⑧ BOTTOM ANGLE: Bottom angle position.
  ⑨ INITIAL: Enable user to initialize setting of PRIVACY MENU.

SPECIAL
>CAM TITLE ··· [–]
LANGUAGE ··· ENGLISH
COMM ADJ ··· [–]
PRIVACY ··· [–]
MOTION DETECT ··· [–]
DISPLAY ··· [–]
INITIAL
RETURN

CAM TITLE
0123456789ABCDEFGHIJKLMN
OPQRSTUVWXYZ!?+#$%{}<>{.}
SPACE>> <<BACK
LOCATION ··· [–]
RETURN

[TITLE LOCATION]
TITLE
[U] ↑ [D] ↓ [L]← [R]→ [M] +

CAMM ADJ
>CAM ID ··· 000
BAUDRATE ··· 9600
RETURN

PRIVACY
>ZONE NO ··· 0
MASK ··· OFF
V START ··· 07
V END ··· 12
H START ··· 10
H END ··· 19
TOP ANGLE ··· 00
BOTTOM ANGLE ··· 00
INITIAL
RETURN

OSD MANUAL

- MOTION DET : Motion detection and Face detection function.
  ① MOTION MODE : Enable user to set up ON/OFF.
  ② LEVEL : Enable user to setup a motion detect sensitivity (0~15).
  ③ FACE MODE : Enable user to set up ON/OFF.
  ④ LEVEL : Enable user to set up a face detect sensitivity (0~15).
  ⑤ V START : Mask Vertical start position.
  ⑥ V END : Mask Vertical end position.
  ⑦ H START : Mask Horizontal start position.
  ⑧ H END : Mask Horizontal end position.
  ⑨ INITIAL : Enable user to initialize setting of MOTION DETECT.

MOTION DET
>MOTION MODE ··· ON
LEVEL ··· 08
FACE MODE ··· ON
LEVEL ··· 07
V START ··· 01
V END ··· 06
H START ··· 01
H END ··· 10
INITIAL
RETURN

- DISPLAY : Enable user to set up a screen marking of CAM ID, CAM TITLE, MOTION,FACE
  ① CAM ID : Enable user to set up output on Camera ID screen.
  ② CAM TITLE : Enable user to set up output in fixed CAM TITLE.
  ③ MOTION DETECT : Enable user to set up out put of MOTION on the screen as MOTION DET ON setting.
  ⑤ FACE DETECT : Enable user to set up out put of FACE on the screen as FACE DETECT ON setting.
  ④ INITIAL : Enable user to initialize of DISPLAY menu.

DISPLAY
>CAM ID ··· OFF
CAM TITLE ··· OFF
MOTION DETECT ··· OFF
FACE DETECT ··· OFF
INITIAL
RETURN

8. FACTORY DEFAULT
: Enable user to reset all of the status as the factory default Setting up using LEFT, RIGHT KEY.

9. EXIT
: Enable user to EXIT the OSD menu Setting up using LEFT, RIGHT KEY.

M092-EDR380-001

HIGH RESOLUTION WDR COLOR MODULE CAMERA

OPERATION MANUAL

Thank you for choosing our high quality camera.
Before attempting to connect or operate, please read and follow these instructions.

CAUTIONS

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions;

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note -

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense."

WARNING -

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Caution -

Any changes or modifications in construction of this devies which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

⚠ CAUTION ⚠

1. A regulated DC12V 300mA power supply is recommended for use with this camera for the best picture and the most stable operation.
An unregulated power supply can cause damage to the camera.
When unregulated power supply is applied, product warranty will be out of subject.
2. It is recommended that the camera is used with a monitor that has a CCTV quality 75 video impedance level. If your monitor is switched to high impedance then please adjust accordingly.
3. Do not attempt to disassemble the camera to gain access to the internal componets. Refer servicing to your dealer.
4. Never face the camera towards the sun or any bright or reflective light, which may cause smear on the picture and possible damage to the CCD.
5. Do not remove the serial sticker for the warranty service.

CAUTIONS

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicate that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

This product should not be mixed with other commercial wastes purchased this product, or their local government office, for details of where and how they can take item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.
Household users should contact either the retailer where they for disposal.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER(OR BACK). NO USER. SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient mangnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instruction in the literature accompanying the appliance.

FEATURES

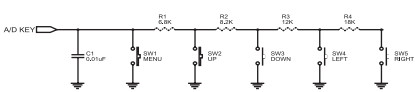
- 1/3˝960H SONY Double Scan Super HAD CCD II
- High Resolution of 700TV Lines
- WDR (Wide Dynamic Range)
- OSD Function
- Multi Language (English / Chinese / Russian / Spanish / German)
- Digital slow shutter
- 3DNR
- Privacy Zone 15Zone
- 3x Digital Zoom
- Motion Detect, Face Detection
- Only DC12V
- RS-232C TTL Level Interface(RS-485 Option)
- A/D Remote Controller > Option

How WDR makes better image?

WDR allows every detail to be captured accurately even if one portion is bright while other portions are dark.

Option(Lens.A/D Remocom)

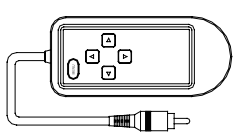
Lens Type	Pin Hole
	Board
	Varlfocal
	C/CS Mount



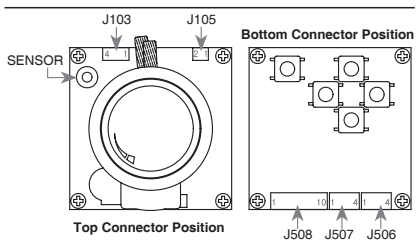
Function

SW1 : MENU	OSD Menu on/off
SW2 : UP	OSD Menu up
SW3 : DOWN	OSD Menu down
SW4 : LEFT	OSD Menu left
SW5 : RIGHT	OSD Menu right

Option



CONNECTION



1) J103(DC IRIS)

PIN NO.	NAME	I/O
1	DAMP +	O
2	DAMP -	O
3	DRV +	O
4	GND	-

2) J105(IR CUT)

PIN NO.	NAME	I/O
1	IR CUT OUT +	O
2	IR CUT OUT -	O

3) J506(DC IRIS)

PIN NO.	NAME	I/O
1	DAMP +	O
2	DAMP -	O
3	DRV +	O
4	GND	-

CONNECTION

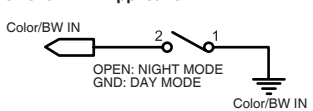
4) J507(DN_I/O)

PIN NO.	NAME	I/O
1	+12V	O
2	GND	-
3	COLOR/BW IN	I
4	COLOR/BW OUT	O

5) J508(DN_I/O)

PIN NO.	NAME	I/O
1	GND	-
2	VIDEO	O
3	GND	-
4	+12V	I
5	RXD(TRX-)	I/O
6	TXD(TRX+)	I/O
7	A/D KEY1	I
8	MOTION	O
9	COLOR/BW IN	I
10	GND	-

COLOR/BW IN Application

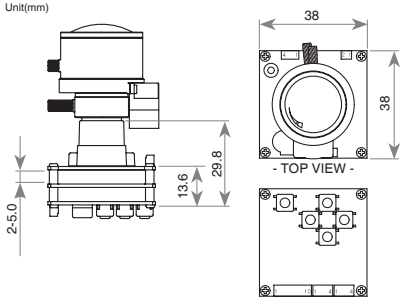


RS232C TTL LEVEL

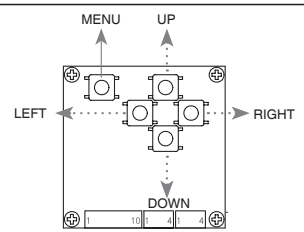
HIGH : +3.3V
LOW : GND

DIMENSIONS

Unit(mm)



Control Function



SPECIFICATION

Signal Format	NTSC	PAL
Image Device	1/3" 960H SONY Double Scan Super HAD CCD II	
Scanning System	2:1 Interlace	
H.Resolution	750TV Lines	
Scanning Frequency	H:15.734KHz, V:59.94Hz	H:15.625KHz, V:50Hz
Total Pixels	1028(H) X 508(V)	1028(H) X 596(V)
Effective Pixels	976(H) X 494(V)	976(H) X 582(V)
Electronic Shutter	1/60 ~1/100,000sec	1/50 ~1/100,000sec
Digital Zoom Ratio	3x	
Digital Slow Shutter	OFF, 2 ~ 128 Field	
Flickerless	ON / OFF	
WDR	ON / OFF (Level adjustable)	
BLC	ON / OFF (Level adjustment, Area selection)	
3DNR	ON / OFF (Level adjustable)	
Image Function	Image reverse(NORMAL/H / V / HV), Freeze	
Sharpness	Level adjustable	
AGC	LOW / MID / HIGH	
Day & Night	COLOR / BW / AUTO / EXT	
Motion Detection	ON / OFF (Level adjustable, Area adjustment)	
Face Detection	ON / OFF (Level adjustable, Area adjustment)	
Privacy Masking	15 Zones (Area adjustment)	
White Balance	ATW / PUSH / PUSH LOCK / MANUAL(R Gain, B Gain)	
OSD	Built in	
Language	English / Chinese / Russian / Spanish / German	
Protocol	Pelco*D"	
Baud Rate	2400 / 4800 / 9600 / 19200	
S/N Ratio	More than 50dB(AGC OFF, 3DNR ON)	
Gamma	r=0.45	
Min. Illumination	0.08Lux(Color) / 0.04Lux(BW) (30IRE@F1.2, AGC:HIGH)	
Sync System	Internal	

SPECIFICATION

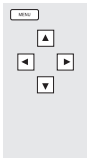
Video Output	1.0 Vp-p Composite 75(Ω) unbalanced
Lens	PIN HOLE, Board Lens, DC IRIS(IR Remove) Vari focal lens, C/CS(DC\VIDEO)
Power Consumption	DC 12V ±10%, Max 170mA
OperatingTemperature	14°F~122°F(-10°C~+50°C)
Storage Temperature	-4°F~140°F(-20°C~+60°C)
Humidity	Less than 80%
External Control	A/D KEY, RS232C TTL(RS485 option)
Weight	Approx. 35g
Dimensions(mm)	38mm x 38mm x 3 Board

OSD MANUAL

MENU DESCRIPTION

- The best clear image can be obtained color camera with WDR(Wide Dynamic Range).
- The camera switches lenses automatically depending on the illumination, which promotes the best possible color images during the day and black / white image at night.
- The camera function can be controlled by OSD menu.

OSD STRUCTURE



- ▲,▼ : Menu up / down
- ◀,▶ : Menu left / right
- ■ : MENU

OSD MANUAL

OSD FUNCTION DESCRIPTION

1.LENS
: Enable user to select the lens type according to equipped with camera. Set up using LEFT, RIGHT KEY at each menu.

- LENS TYPE
  ①ELC : Enable user to set up for BOARD lens.
  ②DC : Enable user to set up for DC Iris lens.
  ③VIDEO : Enable user to set up for VIDEO Iris lens.
- LEVEL
  : Enable user to select the level for Brightness of image(0~15).
- INITIAL
  : Enable user to initialize the LENS menu set up.

LENS
>LENS TYPE ··· DC
LEVEL ··· 08
INITIAL
RETURN

2. EXPOSURE
: Enable user to set up the function of SHUTTER, FLICKERLESS, AGC, DSS. Set up using LEFT, RIGHT KEY at each menu.

- SHUTTER
  : Enable user to set up the Shutter Speed
  -> 1/60(50), 1/100(120), 1/250, 1/500, 1/1K, 1/2K, 1/4K, 1/10K, 1/100K
  *() is for PAL TYPE
- FLICKERLESS
  : Enable user to set up the FLICKERLESS ON/OFF.
- AGC
  : Enable user to make image bright to amplify the Gain.
  -> LOW, MID, HIGH
- DSS(Digital Slow Shutter)
  : Enable user to enhance video quality in extreme low-light condition to slow down the shutter speed and collect over multiple fields based on the shutter limit setting.
  -> OFF, 2X, 4X, 8X, 16X, 32X, 64X, 128X
- INITIAL
  : Enable user to initialize the Exposure menu set up.

EXPOSURE
>SHUTTER ··· 1/60
FLICKERLESS ··· OFF
AGC ··· MID
DSS ··· 10x
INITIAL
RETURN

OSD MANUAL

3. WHITE BALANCE
: Enable user to represent the accurate white color by controlling the R,G,B level. Setting up LEFT, RIGHT KEY on each menu.

- WB MODE
  ① ATW : Enable user to trace the White Balance automatically in the range of 2,300K~10,000K.
  ② PUSH : Enable user to search for White Balance automatically. In this mode, color temperature range is broader than ATW.
  ③ PUSH LOCK : Enable user to fix the White Balance according to the color temperature in the certain environment.
  ④ MANUAL : Enable user to sets the White Balance according to the circumstance.
- RED CONT: In the USER setting of WB MODE, enable user to set the RED GAIN.
- BLUE CONT:In the USER setting of WB MODE, enable user to set the BLUE GAIN.
- PUSH AUTO : In the PUSH LOCK setting of WB MODE, enable user to fix the White Balance in camera setting.
- INITIAL : Enable user to reset the WHITE BALANCE menu setting.

WHITE BALANCE
>WB MODE ··· ATW
RED CONT ··· ----
BLUE CONT ··· ----
PUSH CONT ··· ----
INITIAL
RETURN

4. WDR/BLC
: Use the condition which Image doesn't figure out with BLC such as place surrounded windows and lobby. Set the WDR using the LEFT, RIGHT KEY on the each menu.

- WDR MODE
  ① OFF : None WDR
  ② ON : WDR Fixed
- WDR LEVEL
  : Enable user to set WDR Level(0~15 level).
- BLC(Back Light Compensation)
  : Back Light Compensation
- BLC ZONE : Enable user to set the BLC area. TOP, BOTTOM, CENTER, LEFT, RIGHT
- BLC LEVEL : Enable user to set BLC in selected area(0~15 level).
- INITIAL : Enable user to initialize the WDR setting.

WDR/BLC
>WDR MODE ··· OFF
WDR LEVEL ··· 08
BLC ··· OFF
BLC ZONE ··· CENTER
BLC LEVEL ··· 04
INITIAL
RETURN

TOP		
LEFT	CENTER	RIGHT
BOTTOM		

OSD MANUAL

5. DAY&NIGHT
: Conversion of output image COLOR / BW depending on exterior environment Enable user to set the LEFT, RIGHT KEY in menu.

- D&N MODE
  ①COLOR : Enable user to fix the output image in color.
  ②B/W : Enable user to fix the output image in B/W.
  ③AUTO : Enable user to convert to COLOR/BW automatically
  ④EXT : Enable user to convert to COLOR/BW by signal of the exterior input.
  -> Low input signal : COLOR
  -> High input signal : BW
- DETECT MODE
  ①AUTO : SENSOR + VIDEO Detection Mode
  Enable user to convert to COLOR/BW by exterior sensor with illumination
  ②SENSOR : SENSOR Only Detection Mode
  Enable user to convert to COLOR/BW automatically by exterior sensor
  ②VIDEO : VIDEO Only Detection Mode Enable user to convert to COLOR/BW automatically by luminace element on Screen
- DWELL TIME : In D&N MODE AUTO, enable user to set to delay time for changing COLOR/BW (0~10sec).
- D->N LEVEL : Day(Color) to Night(BW), level(0~19).
- N->D LEVEL : Night(BW) to Day, level(1~20).
- INITIAL : Enable user to initialize the setting in DAY&NIGHT menu.

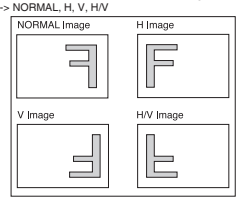
DAY & NIGHT
>D&N MODE ··· COLOR
DETECT MODE ··· ----
DWELL TIME ··· ----
D -> N LEVEL ··· ----
N -> D LEVEL ··· ----
INITIAL
RETURN

SENSOR D->N / N-> D LEVEL			
LEVEL	LUX	LEVEL	LUX
0	1 Lux	11	12 Lux
1	2 Lux	12	13 Lux
2	3 Lux	13	14 Lux
3	4 Lux	14	15 Lux
4	5 Lux	15	16 Lux
5	6 Lux	16	17 Lux
6	7 Lux	17	18 Lux
7	8 Lux	18	19 Lux
8	9 Lux	19	20 Lux
9	10 Lux	20	21 Lux
10	11 Lux		

OSD MANUAL

6. IMAGE
: REVERSE, DNR, SHARPNESS, FREEZE, D-ZOOM functions set up by pressing LEFT, RIGHT KEY.

- REVERSE: Enable user to reverse the image.
  -> NORMAL, H, V, H/V



- DNR : Reduces noise by using time-based filtering.
- DNR LEVEL : Enable user to set level(0~15 steps).
- SHARPNESS : Enable user to control the image sharpness (0~15steps).
- FREEZE : Enable user to freeze the image.
- D-ZOOM(Digital Zoom)
  -> Max. 3x Digital Zoom.
- INITIAL : Enable user to initialize the setting on IMAGE menu.

IMAGE
>REVERSE ··· NORMAL
DNR ··· OFF
DNR LEVEL ··· 4
SHARPNESS ··· 10
FREEZE ··· OFF
D-ZOOM ··· 1,0x
INITIAL
RETURN

OSD MANUAL

7. SPECIAL
: Setting up the CAM TITLE, LANGUAGE, COMM ADJ, PRIVACY, MOTION DET, DISPLAY Set up using LEFT and RIGHT key in each manual.

- CAM TITLE :
  Enable user to choose any word in screen. (Maximum 10 letter is available)
  ① A letter Choice from the screen using Menu key.
  ② Enable user to move to next menu using LEFT, RIGHT KEY in LOCATION.
  ③ By using UP, DOWN, LEFT, RIGHT KEY, enable user to choose any letters in LOCATION and then get back to previous step.
  ④ Enable user to finish words choice and position by using LEFT, RIGHT KEY in RETURN.
- LANGUAGE :
  Enable user to set up an OSD language.
  -> ENGLISH, CHINESE, RUSSIAN, SPANISH, GERMAN
- COMM ADJ : Enable user to set up CAMERA ID, BAUDRATE.
  ① CAM ID: Enable user to set up Camera ID(0~255).
  ② BAUDRATE: A communication speed to Communicate with external device.
  (2400, 4800, 9600, 19200).
- PRIVACY: Privacy is the function that covers some part on screen to prevent private life (Maximum 15 point covered).
  ① ZONE: Enable user to set up positions from 0to14.
  ② MASK: Enable user to set up screen output of chosen position.
  ③ V START: Mask Vertical start position.
  ④ V END: Mask Vertical end position.
  ⑤ H START: Mask Horizontal start position.
  ⑥ H END: Mask Horizontal end position.
  ⑦ TOP ANGLE: Top angle position.
  ⑧ BOTTOM ANGLE: Bottom angle position.
  ⑨ INITIAL: Enable user to initialize setting of PRIVACY MENU.

SPECIAL
>CAM TITLE ··· [–]
LANGUAGE ··· ENGLISH
COMM ADJ ··· [–]
PRIVACY ··· [–]
MOTION DETECT ··· [–]
DISPLAY ··· [–]
INITIAL
RETURN

CAM TITLE
0123456789ABCDEFGHIJKLMN
OPQRSTUVWXYZ!?+#$%{}<>{.}
SPACE>> <<BACK
LOCATION ··· [–]
RETURN

[TITLE LOCATION]
TITLE
[U] ↑ [D] ↓ [L]← [R]→ [M] +

CAMM ADJ
>CAM ID ··· 000
BAUDRATE ··· 9600
RETURN

PRIVACY
>ZONE NO ··· 0
MASK ··· OFF
V START ··· 07
V END ··· 12
H START ··· 10
H END ··· 19
TOP ANGLE ··· 00
BOTTOM ANGLE ··· 00
INITIAL
RETURN

OSD MANUAL

- MOTION DET : Motion detection and Face detection function.
  ① MOTION MODE : Enable user to set up ON/OFF.
  ② LEVEL : Enable user to setup a motion detect sensitivity (0~15).
  ③ FACE MODE : Enable user to set up ON/OFF.
  ④ LEVEL : Enable user to set up a face detect sensitivity (0~15).
  ⑤ V START : Mask Vertical start position.
  ⑥ V END : Mask Vertical end position.
  ⑦ H START : Mask Horizontal start position.
  ⑧ H END : Mask Horizontal end position.
  ⑨ INITIAL : Enable user to initialize setting of MOTION DETECT.

MOTION DET
>MOTION MODE ··· ON
LEVEL ··· 08
FACE MODE ··· ON
LEVEL ··· 07
V START ··· 01
V END ··· 06
H START ··· 01
H END ··· 10
INITIAL
RETURN

- DISPLAY : Enable user to set up a screen marking of CAM ID, CAM TITLE, MOTION,FACE
  ① CAM ID : Enable user to set up output on Camera ID screen.
  ② CAM TITLE : Enable user to set up output in fixed CAM TITLE.
  ③ MOTION DETECT : Enable user to set up out put of MOTION on the screen as MOTION DET ON setting.
  ⑤ FACE DETECT : Enable user to set up out put of FACE on the screen as FACE DETECT ON setting.
  ④ INITIAL : Enable user to initialize of DISPLAY menu.

DISPLAY
>CAM ID ··· OFF
CAM TITLE ··· OFF
MOTION DETECT ··· OFF
FACE DETECT ··· OFF
INITIAL
RETURN

8. FACTORY DEFAULT
: Enable user to reset all of the status as the factory default Setting up using LEFT, RIGHT KEY.

9. EXIT
: Enable user to EXIT the OSD menu Setting up using LEFT, RIGHT KEY.

SPECIFICATION

Signal Format	NTSC	PAL
Image Device	1/3" 960H SONY Double Scan Super HAD CCD II	
Scanning System	2:1 Interlace	
H.Resolution	750TV Lines	
Scanning Frequency	H:15.734KHz, V:59.94Hz	H:15.625KHz, V:50Hz
Total Pixels	1028(H) X 508(V)	1028(H) X 596(V)
Effective Pixels	976(H) X 494(V)	976(H) X 582(V)
Electronic Shutter	1/60 ~1/100,000sec	1/50 ~1/100,000sec
Digital Zoom Ratio	3x	
Digital Slow Shutter	OFF, 2 ~ 128 Field	
Flickerless	ON / OFF	
WDR	ON / OFF (Level adjustable)	
BLC	ON / OFF (Level adjustment, Area selection)	
3DNR	ON / OFF (Level adjustable)	
Image Function	Image reverse(NORMAL/H / V / HV), Freeze	
Sharpness	Level adjustable	
AGC	LOW / MID / HIGH	
Day & Night	COLOR / BW / AUTO / EXT	
Motion Detection	ON / OFF (Level adjustable, Area adjustment)	
Face Detection	ON / OFF (Level adjustable, Area adjustment)	
Privacy Masking	15 Zones (Area adjustment)	
White Balance	ATW / PUSH / PUSH LOCK / MANUAL(R Gain, B Gain)	
OSD	Built in	
Language	English / Chinese / Russian / Spanish / German	
Protocol	Pelco*D"	
Baud Rate	2400 / 4800 / 9600 / 19200	
S/N Ratio	More than 50dB(AGC OFF, 3DNR ON)	
Gamma	r=0.45	
Min. Illumination	0.08Lux(Color) / 0.04Lux(BW) (30IRE@F1.2, AGC:HIGH)	
Sync System	Internal	

SPECIFICATION

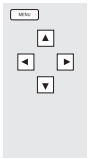
Video Output	1.0 Vp-p Composite 75(Ω) unbalanced
Lens	PIN HOLE, Board Lens, DC IRIS(IR Remove) Vari focal lens, C/CS(DC\VIDEO)
Power Consumption	DC 12V ±10%, Max 170mA
OperatingTemperature	14°F~122°F(-10°C~+50°C)
Storage Temperature	-4°F~140°F(-20°C~+60°C)
Humidity	Less than 80%
External Control	A/D KEY, RS232C TTL(RS485 option)
Weight	Approx. 35g
Dimensions(mm)	38mm x 38mm x 3 Board

OSD MANUAL

MENU DESCRIPTION

- The best clear image can be obtained color camera with WDR(Wide Dynamic Range).
- The camera switches lenses automatically depending on the illumination, which promotes the best possible color images during the day and black / white image at night.
- The camera function can be controlled by OSD menu.

OSD STRUCTURE



- ▲,▼ : Menu up / down
- ◀,▶ : Menu left / right
- ■ : MENU

OSD MANUAL

OSD FUNCTION DESCRIPTION

1.LENS
: Enable user to select the lens type according to equipped with camera. Set up using LEFT, RIGHT KEY at each menu.

- LENS TYPE
  ①ELC : Enable user to set up for BOARD lens.
  ②DC : Enable user to set up for DC Iris lens.
  ③VIDEO : Enable user to set up for VIDEO Iris lens.
- LEVEL
  : Enable user to select the level for Brightness of image(0~15).
- INITIAL
  : Enable user to initialize the LENS menu set up.

LENS
>LENS TYPE ··· DC
LEVEL ··· 08
INITIAL
RETURN

2. EXPOSURE
: Enable user to set up the function of SHUTTER, FLICKERLESS, AGC, DSS. Set up using LEFT, RIGHT KEY at each menu.

- SHUTTER
  : Enable user to set up the Shutter Speed
  -> 1/60(50), 1/100(120), 1/250, 1/500, 1/1K, 1/2K, 1/4K, 1/10K, 1/100K
  *() is for PAL TYPE
- FLICKERLESS
  : Enable user to set up the FLICKERLESS ON/OFF.
- AGC
  : Enable user to make image bright to amplify the Gain.
  -> LOW, MID, HIGH
- DSS(Digital Slow Shutter)
  : Enable user to enhance video quality in extreme low-light condition to slow down the shutter speed and collect over multiple fields based on the shutter limit setting.
  -> OFF, 2X, 4X, 8X, 16X, 32X, 64X, 128X
- INITIAL
  : Enable user to initialize the Exposure menu set up.

EXPOSURE
>SHUTTER ··· 1/60
FLICKERLESS ··· OFF
AGC ··· MID
DSS ··· 10x
INITIAL
RETURN

OSD MANUAL

3. WHITE BALANCE
: Enable user to represent the accurate white color by controlling the R,G,B level. Setting up LEFT, RIGHT KEY on each menu.

- WB MODE
  ① ATW : Enable user to trace the White Balance automatically in the range of 2,300K~10,000K.
  ② PUSH : Enable user to search for White Balance automatically. In this mode, color temperature range is broader than ATW.
  ③ PUSH LOCK : Enable user to fix the White Balance according to the color temperature in the certain environment.
  ④ MANUAL : Enable user to sets the White Balance according to the circumstance.
- RED CONT: In the USER setting of WB MODE, enable user to set the RED GAIN.
- BLUE CONT:In the USER setting of WB MODE, enable user to set the BLUE GAIN.
- PUSH AUTO : In the PUSH LOCK setting of WB MODE, enable user to fix the White Balance in camera setting.
- INITIAL : Enable user to reset the WHITE BALANCE menu setting.

WHITE BALANCE
>WB MODE ··· ATW
RED CONT ··· ----
BLUE CONT ··· ----
PUSH CONT ··· ----
INITIAL
RETURN

4. WDR/BLC
: Use the condition which Image doesn't figure out with BLC such as place surrounded windows and lobby. Set the WDR using the LEFT, RIGHT KEY on the each menu.

- WDR MODE
  ① OFF : None WDR
  ② ON : WDR Fixed
- WDR LEVEL
  : Enable user to set WDR Level(0~15 level).
- BLC(Back Light Compensation)
  : Back Light Compensation
- BLC ZONE : Enable user to set the BLC area. TOP, BOTTOM, CENTER, LEFT, RIGHT
- BLC LEVEL : Enable user to set BLC in selected area(0~15 level).
- INITIAL : Enable user to initialize the WDR setting.

WDR/BLC
>WDR MODE ··· OFF
WDR LEVEL ··· 08
BLC ··· OFF
BLC ZONE ··· CENTER
BLC LEVEL ··· 04
INITIAL
RETURN

TOP		
LEFT	CENTER	RIGHT
BOTTOM		

OSD MANUAL

5. DAY&NIGHT
: Conversion of output image COLOR / BW depending on exterior environment Enable user to set the LEFT, RIGHT KEY in menu.

- D&N MODE
  ①COLOR : Enable user to fix the output image in color.
  ②B/W : Enable user to fix the output image in B/W.
  ③AUTO : Enable user to convert to COLOR/BW automatically
  ④EXT : Enable user to convert to COLOR/BW by signal of the exterior input.
  -> Low input signal : COLOR
  -> High input signal : BW
- DETECT MODE
  ①AUTO : SENSOR + VIDEO Detection Mode
  Enable user to convert to COLOR/BW by exterior sensor with illumination
  ②SENSOR : SENSOR Only Detection Mode
  Enable user to convert to COLOR/BW automatically by exterior sensor
  ②VIDEO : VIDEO Only Detection Mode Enable user to convert to COLOR/BW automatically by luminace element on Screen
- DWELL TIME : In D&N MODE AUTO, enable user to set to delay time for changing COLOR/BW (0~10sec).
- D->N LEVEL : Day(Color) to Night(BW), level(0~19).
- N->D LEVEL : Night(BW) to Day, level(1~20).
- INITIAL : Enable user to initialize the setting in DAY&NIGHT menu.

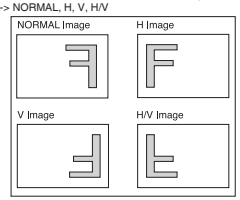
DAY & NIGHT
>D&N MODE ··· COLOR
DETECT MODE ··· ----
DWELL TIME ··· ----
D -> N LEVEL ··· ----
N -> D LEVEL ··· ----
INITIAL
RETURN

SENSOR D->N / N-> D LEVEL			
LEVEL	LUX	LEVEL	LUX
0	1 Lux	11	12 Lux
1	2 Lux	12	13 Lux
2	3 Lux	13	14 Lux
3	4 Lux	14	15 Lux
4	5 Lux	15	16 Lux
5	6 Lux	16	17 Lux
6	7 Lux	17	18 Lux
7	8 Lux	18	19 Lux
8	9 Lux	19	20 Lux
9	10 Lux	20	21 Lux
10	11 Lux		

OSD MANUAL

6. IMAGE
: REVERSE, DNR, SHARPNESS, FREEZE, D-ZOOM functions set up by pressing LEFT, RIGHT KEY.

- REVERSE: Enable user to reverse the image.
  -> NORMAL, H, V, H/V



- DNR : Reduces noise by using time-based filtering.
- DNR LEVEL : Enable user to set level(0~15 steps).
- SHARPNESS : Enable user to control the image sharpness (0~15steps).
- FREEZE : Enable user to freeze the image.
- D-ZOOM(Digital Zoom)
  -> Max. 3x Digital Zoom.
- INITIAL : Enable user to initialize the setting on IMAGE menu.

IMAGE
>REVERSE ··· NORMAL
DNR ··· OFF
DNR LEVEL ··· 4
SHARPNESS ··· 10
FREEZE ··· OFF
D-ZOOM ··· 1,0x
INITIAL
RETURN

OSD MANUAL

7. SPECIAL
: Setting up the CAM TITLE, LANGUAGE, COMM ADJ, PRIVACY, MOTION DET, DISPLAY Set up using LEFT and RIGHT key in each manual.

- CAM TITLE :
  Enable user to choose any word in screen. (Maximum 10 letter is available)
  ① A letter Choice from the screen using Menu key.
  ② Enable user to move to next menu using LEFT, RIGHT KEY in LOCATION.
  ③ By using UP, DOWN, LEFT, RIGHT KEY, enable user to choose any letters in LOCATION and then get back to previous step.
  ④ Enable user to finish words choice and position by using LEFT, RIGHT KEY in RETURN.
- LANGUAGE :
  Enable user to set up an OSD language.
  -> ENGLISH, CHINESE, RUSSIAN, SPANISH, GERMAN
- COMM ADJ : Enable user to set up CAMERA ID, BAUDRATE.
  ① CAM ID: Enable user to set up Camera ID(0~255).
  ② BAUDRATE: A communication speed to Communicate with external device.
  (2400, 4800, 9600, 19200).
- PRIVACY: Privacy is the function that covers some part on screen to prevent private life (Maximum 15 point covered).
  ① ZONE: Enable user to set up positions from 0to14.
  ② MASK: Enable user to set up screen output of chosen position.
  ③ V START: Mask Vertical start position.
  ④ V END: Mask Vertical end position.
  ⑤ H START: Mask Horizontal start position.
  ⑥ H END: Mask Horizontal end position.
  ⑦ TOP ANGLE: Top angle position.
  ⑧ BOTTOM ANGLE: Bottom angle position.
  ⑨ INITIAL: Enable user to initialize setting of PRIVACY MENU.

SPECIAL
>CAM TITLE ··· [–]
LANGUAGE ··· ENGLISH
COMM ADJ ··· [–]
PRIVACY ··· [–]
MOTION DETECT ··· [–]
DISPLAY ··· [–]
INITIAL
RETURN

CAM TITLE
0123456789ABCDEFGHIJKLMN
OPQRSTUVWXYZ!?+#$%{}<>{.}
SPACE>> <<BACK
LOCATION ··· [–]
RETURN

[TITLE LOCATION]
TITLE
[U] ↑ [D] ↓ [L]← [R]→ [M] +

CAMM ADJ
>CAM ID ··· 000
BAUDRATE ··· 9600
RETURN

PRIVACY
>ZONE NO ··· 0
MASK ··· OFF
V START ··· 07
V END ··· 12
H START ··· 10
H END ··· 19
TOP ANGLE ··· 00
BOTTOM ANGLE ··· 00
INITIAL
RETURN

OSD MANUAL

- MOTION DET : Motion detection and Face detection function.
  ① MOTION MODE : Enable user to set up ON/OFF.
  ② LEVEL : Enable user to setup a motion detect sensitivity (0~15).
  ③ FACE MODE : Enable user to set up ON/OFF.
  ④ LEVEL : Enable user to set up a face detect sensitivity (0~15).
  ⑤ V START : Mask Vertical start position.
  ⑥ V END : Mask Vertical end position.
  ⑦ H START : Mask Horizontal start position.
  ⑧ H END : Mask Horizontal end position.
  ⑨ INITIAL : Enable user to initialize setting of MOTION DETECT.

MOTION DET
>MOTION MODE ··· ON
LEVEL ··· 08
FACE MODE ··· ON
LEVEL ··· 07
V START ··· 01
V END ··· 06
H START ··· 01
H END ··· 10
INITIAL
RETURN

- DISPLAY : Enable user to set up a screen marking of CAM ID, CAM TITLE, MOTION,FACE
  ① CAM ID : Enable user to set up output on Camera ID screen.
  ② CAM TITLE : Enable user to set up output in fixed CAM TITLE.
  ③ MOTION DETECT : Enable user to set up out put of MOTION on the screen as MOTION DET ON setting.
  ⑤ FACE DETECT : Enable user to set up out put of FACE on the screen as FACE DETECT ON setting.
  ④ INITIAL : Enable user to initialize of DISPLAY menu.

DISPLAY
>CAM ID ··· OFF
CAM TITLE ··· OFF
MOTION DETECT ··· OFF
FACE DETECT ··· OFF
INITIAL
RETURN

8. FACTORY DEFAULT
: Enable user to reset all of the status as the factory default Setting up using LEFT, RIGHT KEY.

9. EXIT
: Enable user to EXIT the OSD menu Setting up using LEFT, RIGHT KEY.